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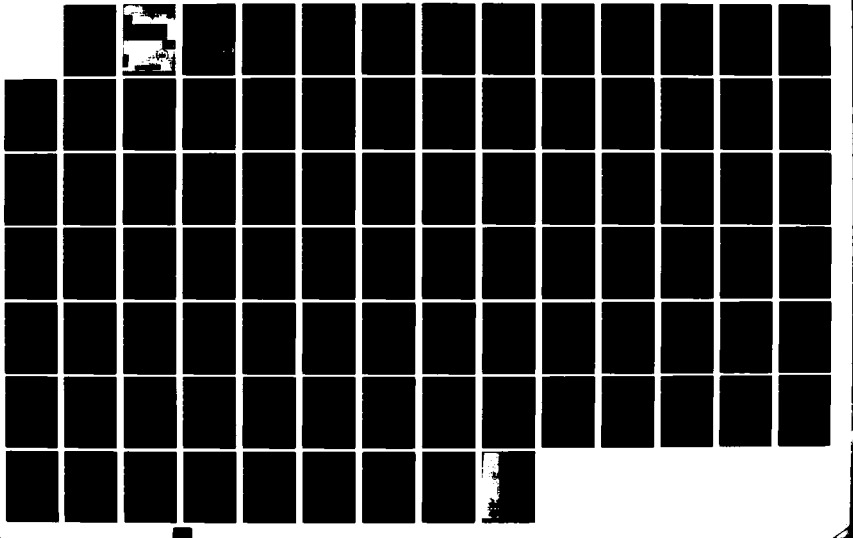

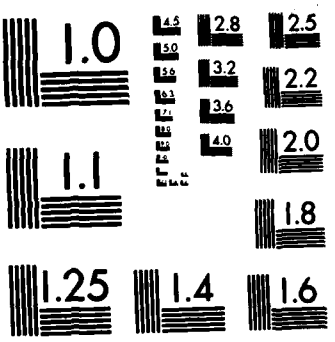

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SEGMENTATION OF PRIOR-SERVICE REENTRANTS IN THE U.S. NAVY: A PRELIMINARY ANALYSIS[a]

Technical Report ONR 83-3, April 1983

Leland L. Beik
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Margaret E. Mitchell

with the assistance of
Stanley D. Fiten

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DMDC data have been analyzed for prior-service enlisted men who reentered the U.S. Navy during fiscal years 1978-1981. The characteristics of men in specific critical ratings are investigated. Differences between selected categories of ratings and geographical locations are identified through differing reentry levels and terms of enlistment for specific technical and craft ratings; time periods; and geographical areas.

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EXECUTIVE SUMMARY

The Pennsylvania State University, Institute for Policy Research, is conducting an empirical study of prior-service personnel for the United States Navy, Office of Naval Research. One part of the study involves a marketing analysis of the entire community of military personnel so as to identify various subgroups or segments. As a first step in this market segmentation study, Defense Manpower Data Center (DMDC) Navy personnel records were examined for fiscal years 1978 to 1981. The analysis described in this report is exploratory and preliminary in method and scope. The final version will include DMDC data for fiscal years 1973 to 1982 and will use discriminant function analysis. Certain results found here deserve attention. In particular, several groups of critical ratings or segments differ in levels of reentry by areas and by districts within areas.

- When profiles were developed, the technical and craft classifications could be distinguished by many characteristics such as education and race. The operations and weapons technicians proved to be quite alike, but the main propulsion and engineering support groups could be distinguished from each other.

- Area and district reentry levels/proportions do vary for the composite group of critical ratings as between the fiscal year (FY) periods 1978-1979 and 1980-1981. Similar variations occurred with respect to terms of enlistment.

- The several groups of ratings differ in levels/proportions of reentrants from one time period to the next and in the levels/proportions of two, four, and six-year terms of enlistment selected by or assigned to reentry personnel.

These preliminary results have associated policy implications. While it would be premature to derive specific policies from these current results, the implications may be listed as follows:

- If made available, information concerning both the relative availability of different rating groups over time and by terms of enlistment might provide direction for recruiters. These factors must also be considered in future components of the research project.

- The supply location of the segments is of obvious interest to the Navy and a strong focus of further research.

- Knowledge of the characteristics required for success in the groups of ratings should enhance the selectivity of recruiting for the Navy. Most of the identified characteristics will also prove of interest in pursuing further research aimed at finding qualified reentrants among prior-service, mid-grade petty officers.

- If not already monitored, the Navy should have at least periodic reports to observe, account for, and adjust recruiting decisions in light of such changes. Further research may have to account for change from one time period to the next and for variations in terms of enlistment where they are inconsistent among areas and districts.

These research and policy implications will be further explored in later reports from The Pennsylvania State University Project.

Stanley P. Stephenson, Jr.
Principal Investigator
April, 1983

INTRODUCTION

The objective of this report is to identify variables for use in dividing the prior-service community into segments. Classifying prior-service personnel into similar groups should help to distinguish segments which react favorably to recruiting efforts from segments which do not. Subsequent segmentation will compare and contrast three sets of personnel: reentry personnel; those who do not interrupt their service; and those who remain out of the U.S. Navy. The end product of the present effort, meanwhile, describes the recruiting of prior-service personnel with regard to selected market segmentation variables.

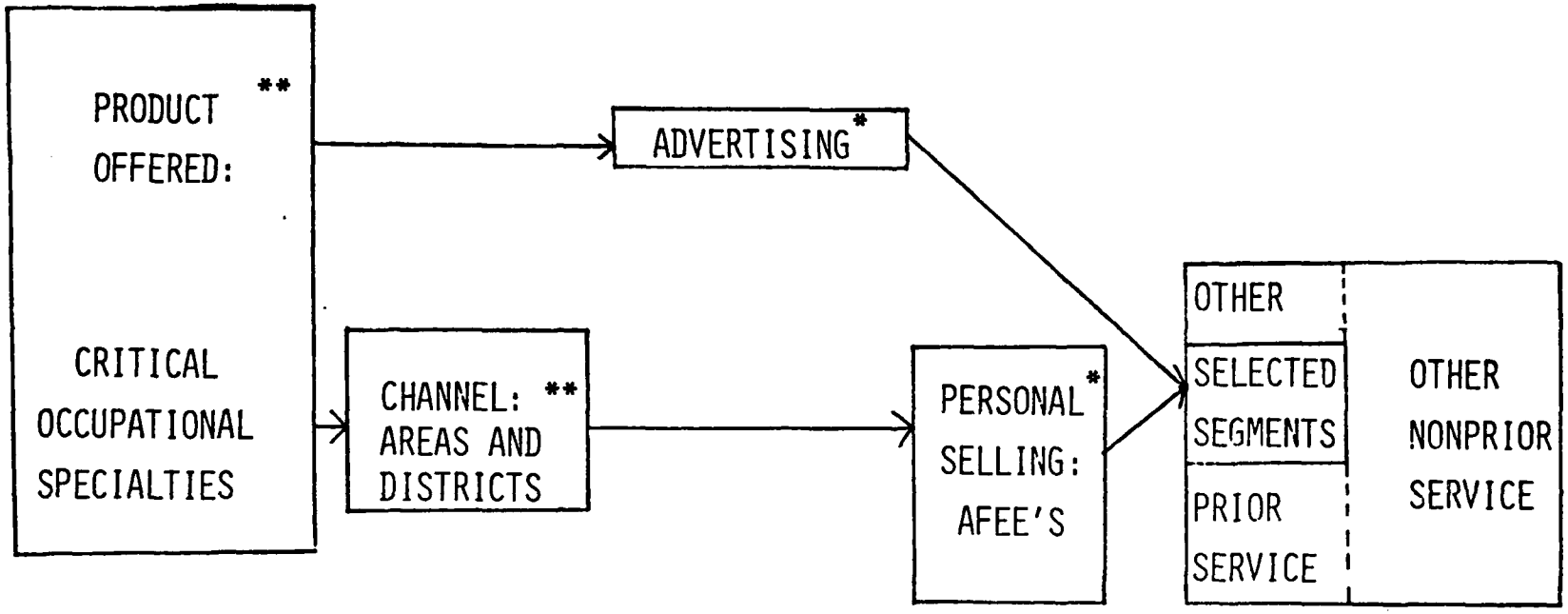
Marketing parallels to the recruiting situation

First, however, a quick description of the marketing parallels in the recruiting situation will aid in understanding the potential of segmentation analysis for Navy use. A first essential in marketing is a thorough analysis of the potential consumer market. The present research contract designates prior-military-service personnel as a target market. This designation constitutes a first-stage criterion for segmentation. Within the prior-service segment, the current analysis identified groups of individuals who have obtained certain chronically scarce ratings as a second stage of segmentation.

Market analysis is indicated by the right-hand block of Figure 1 in which the selected or target segments are nested within other prior- and non-prior service segments. Given further description of the selected segments, strategies and tactics may be developed to target recruiting efforts. The remainder of the figure develops the marketing analogy to show the kinds of marketing efforts which can be designed to influence the segments via the strategies and tactics.

FIGURE 1

Marketing Analysis Applied to the Naval Recruiting Process: The Resultant Model



* THE TWO MORE CONTROLLABLE FACTORS.

** THE TWO LESS CONTROLLABLE FACTORS.

The primary means of promotion consist of personal selling or face-to-face recruiting and advertising. Recruiting supplies the more powerful means of persuasion, provided contacts can be made with members of each segment. Persuasive messages may also be aimed at segments through advertising. Success depends upon appeals which will persuade segment members to contact recruiters. In both instances, it is necessary to have information which characterizes the nature and location of each segment. The present report explores preliminary descriptive information concerning four critical segments: operations technicians, weapons technicians, main propulsion personnel, and engineering support personnel.

The marketing channel consists of recruiting areas, districts, and AFEE stations in which the personal selling takes place. This is directly parallel to an integrated firm which sells its products through regional and district offices. To back up personal selling and advertising, the product must be both sound and attractive. The product, in this analogy, is the set of critical occupational specialties that are targeted toward equivalent prior-service segments.

Several added implications of Figure 1 might be noted. Ultimate strategy might contemplate revision of the job specifications to make the product more attractive to potential recruits. The boundaries of AFEE stations, districts and areas might be redesigned to reach the total market more effectively. Revising the job specifications, however, would be a long-term, comprehensive task; and more than minor adjustments of areas and districts would also require a more extensive study than the present project. While some insights relative to job specifications and design of channel may develop, the activities of advertising and personal recruiting are more immediately controllable.

The main focus of this report and the later segmentation study is to develop information of aid to the recruiding activity.

Description of Data Base

Following a brief description of the data base, a first section of the report will demonstrate that the proportion of reentrants in four groups of critical ratings differed with regard to (1) geographical areas, (2) selected demographic and socioeconomic variables, and (3) time periods and terms of enlistment. A second section will show in more detail how reentry levels differed geographically by periods and by terms of enlistment. The first section concentrates on variables which are potentially actionable as guides to recruiting; the second section deals with variables which might confound further research if not taken into account. Both sections may tend at times to confirm (or rediscover) Navy policies with regard to recruiting. At other times, there might be some surprises.

The current data base, made available by DMDC, contains only enlisted men who reentered the Navy after an interruption in service. Each individual appears in the data only once. Initial enlistments and immediate reenlistments are not taken into account here. The data base was restricted to specific ratings, geographical areas, and time periods. The reasons for these restrictions are described in the following sections.

Selection of specific ratings. Recruiting interest for mid-grade petty officers centers on occupational specialties which are chronically in short supply. For purposes of analysis a suggested list was developed. This list was then adjusted and confirmed in a July 1982 telephone

conversation between Dr. Stanley P. Stephenson of The Pennsylvania State University and Lt. Michael Reed of the Naval Recruiting Command. This process identified nine ratings as being critical to the Navy's needs for mid-grade petty officers: Electronics Technician (ET), Data Systems Technician (DS), Gunner's Mate (GM), Fire Control Technician (FT), Boiler Technician (BT), Machinist's Mate (MM), Electrician's Mate (EM), Hull Maintenance Technician (HT), and Interior Communications Electrician (IC). These nine ratings correspond to sixteen occupational codes which are used by the Department of Defense (DOD).

The nine critical ratings were divided into two groups which may be broadly designated as technical and craft personnel. Each of these groups was further divided into two segments: operations technicians and weapons technicians within the technical group, main propulsion and engineering support within the craft group. The resulting four segments are presented with their corresponding ratings. The DOD occupational codes are indicated by the numerical codes listed with each rating.

1. Technical group

    a. Operations Technicians

        1) ET (100/101/102/102/193)
        2) DS (150)

    b. Weapons technicians

        1) GM (633, 644)
        2) FT (104, 113, 121)

2. Craft group

    a. Main propulsion

        BT and MM (651)

    b. Engineering support

        1) EM (662)
        2) HT (701, 790)
        3) IC (623)

Inevitably, some ambiguity exists in these groups since a few of the specific ratings are applied in quite different assignments. These segments, nevertheless, can be tested to observe whether they are homogeneous internally and distinct externally in ways that may facilitate recruiting activities.

Selection of specific geographical areas. Since recruiting is accomplished in geographically dispersed stations, analytical attention is focused on the six current continental recruiting areas and their component districts. These six recruiting areas are identified as areas One (Northeast), Three (Southeast), Four (Mid-Atlantic, near Midwest), Five (North Central), Seven (South Central), and Eight (Pacific Mountain). No area two or six appears since these numerical designations are not presently used.

Forty-two districts appear in the analysis. The subject base is limited to the fifty states since offshore recruiting is minimal. District boundaries may not be identical to those currently in use since adjustments apparently took place during the period covered.

Selection of specific time periods. Previous analysis noted that FY's 1973-1974 and 1978-1979 were relatively poor recruiting years, while FY's 1975-1976-1977 and 1980-1981 were more favorable (Stephenson, Beik, Ellison, & Fitch, 1982, Table 1). In addition, regression analysis suggested that the years after FY 1978 were quite different from the earlier years available in the data base (Stephenson et al., 1982, p. 2). The present analysis is therefore restricted to the more recent and probably more relevant years. FY's 1978-1979 are used as period one, and FY's 1980-1981 are used as period two in order to investigate recent time-period changes which may have occurred in recruiting prior-service personnel.

Description of the Reduced Data Base

These definitions, especially the four rating-group segments and the two, two-year periods, reduce the data base from the previous total of 77,027 individuals to 6,327 subjects for analysis. Missing data or attention to subgroups, however, often changes the totals in the several analyses which follow.

Initial emphasis is given to developing information concerning variations in recruiting critical ratings by location and by other variables or characteristics which show an impact on the recruiting process.

DIFFERENCES IN REENTRY LEVELS AMONG TECHNICAL AND CRAFT SEGMENTS

This section of the report will investigate variations in the number of reentrants among the four technical and craft segments previously defined. The following subsections will show that the occupational segments differed by (1) recruiting areas and by districts within areas, (2) selected demographic and socioeconomic variables, and (3) time periods and terms of enlistment.

Description of Data Analysis

This information will be developed through the use of basic cross classifications. The first table in the following section, for example, expresses the numbers and proportions of each of the occupational-specialty segments recruited during FY's 1978-1981. In interpreting this and subsequent tables, attention should be directed to both numbers and proportions. Occasionally, a proportion may appear quite favorable where actual numbers are small. Or conversely, the numbers may be substantial where the proportions appear less favorable.

Interpretation of Chi-square statistical test. The cross classifications are accompanied by the Chi-square statistical test and sometimes also by a test of the significant difference between two percents. The probabilities associated with these tests merely assure that chance variation due to sampling does not account for the reported differences in the data. A probability less than .05 is assumed to indicate that such differences are not due to chance. For instance, the probability reported in Table 1 (less than .004) indicates that variations in the occupational specialties recruited in the six areas are greater than random variations attributable to sampling. Since occupational segments are unlikely to have substantial influence on the areas, some conditions in the areas most likely account for any concentrations among the specialties.

Limitations of the Chi-square statistical test. Two anomalies inherent in the present mode of analysis should be mentioned. First, the Chi-square test applied to cross tabulations based on large numbers of cases tends to show statistical significance even though any underlying relationship may be weak. Ultimately, the question is whether differences in the numbers and proportions identified are large enough to improve recruiting strategies and tactics. Second, large numbers of cases tend to "average out" and hide relationships that might be important. If significant, the Chi-square test says only that some relationship exists in the table. Further analysis is often needed to ferret it out. The percentage tests are later used to verify period changes between geographic units, thereby developing some specific associations not indicated by the more general Chi-square test. Subsequent analysis will provide further refinements to the present findings.

Differences Among Areas

The data presented in Table 1 indicate that the number of reentrants was proportionately larger in some areas than others. Specific occupational-area differences may be observed by comparing the two following types of percentages: the row percent (that is, the percentage of those in each rating group who are in a specified area), and the similar percent at the base of the column (that is, the percentage of those in all rating groups who are in a specified area). Such comparisons suggest a number of relationships. For example, the operations technicians from the Southeast area were numerically quite large (257) and proportionately favorable (20.13 percent). Weapons technicians were both numerically (79) and proportionately (11.72 percent) less available in the North Central area than elsewhere.

Differences in the proportion of reentrants in different areas may also be observed by comparing two other types of percents: the column percents (that is, the percentage of reentrants in a particular area who are in a certain rating group), and the corresponding percent in the last column (that is, the percentage of all reentrants who are in a particular rating group). Such comparisons imply certain relationships. For example, compared with other areas, the Mid-Atlantic, Near Midwest area had the lowest proportion (17.68 percent) of operations technicians and the highest proportion (12.02 percent) of weapons technicians. The North Central area reported the lowest proportion (26.21 percent) of main propulsion personnel and the highest proportion (42.50 percent) of engineering support staff. The South Central area reported the greatest proportion (24.17 percent) of operations technicians. Provided area conditions have not changed rapidly, such data may help to further recruiting efforts in the present and future.

TABLE 1

Number of Reentrants by Rating Group and Area

Rating Group	Area						Total
	Northeast	Southeast	Mid Atlantic, Near Midwest	North Central	South Central	Pacific Mountain	
Operations Technicians	173 (13.55) [19.73]	257 (20.13) [21.52]	203 (15.90) [17.68]	161 (12.61) [20.99]	225 (17.62) [24.17]	258 (20.20) [18.30]	1,277 (100) [20.18]
Weapons Technicians	85 (12.61) [9.69]	118 (17.51) [9.88]	138 (20.47) [12.02]	79 (11.72) [10.30]	105 (15.58) [11.28]	149 (22.11) [10.57]	674 (100) [10.65]
Main Propulsion	276 (14.61) [31.47]	354 (18.74) [29.65]	332 (17.58) [28.92]	201 (10.64) [26.21]	266 (14.08) [28.57]	460 (24.35) [32.62]	1,889 (100) [29.86]
Engineering Support	343 (13.79) [39.11]	465 (18.70) [38.94]	475 (19.10) [41.38]	326 (13.11) [42.50]	335 (13.47) [35.98]	543 (21.83) [38.51]	2,487 (100) [39.31]
Total	877 (13.86)	1,194 (18.87)	1,148 (18.14)	767 (12.12)	931 (14.71)	1.410 (22.29)	6,327 (100)

$\chi^2 = 33.46$, d.f = 15, $P<.004$

( )Percent of rating group reentrants from each area.

[ ]Percent of area reentrants in each rating group.

Tabular summary of differences among areas. When spread out over a four-row, six-column table, the percentage differences are rarely large, and, especially for districts within areas, the numbers in any portion of a table may be small. To aid interpretation, a tabular arrangement is used to summarize Table 1 and subsequent tables. In this tabulation, plus and minus signs are used to signify where the number of reentrants within a particular rating group was proportionately higher or lower than in the total area covered. Equal signs are used where the percentage of reentrants was equal or very close to equal to that of all segments, and double plus or minus signs indicate especially higher or lower percentages of reentrants.

The tabulation below shows that proportionately fewer operations technicians reentered the Navy from the Mid-Atlantic, Near Midwest area than from other areas. Of all operations technicians, 203 (that is, 15.90 percent) reentered from the Mid-Atlantic, Near Midwest area. Among the combination of all four rating groups, 1,148 (that is, 18.14 percent) entered from this area. Relatively more operations technicians (17.62 percent) reentered from the South Central area during the four fiscal years, 1978-1981. For weapons technicians, the Mid-Atlantic, Near Midwest area supplied a relatively large share (20.47 percent). Main propulsion ratings were somewhat less available in the North Central area (10.64 percent), but more readily available in the Pacific Mountain area (24.35 percent). Relatively few engineering support ratings were found in the South Central area (13.47 percent), but comparatively greater numbers in the North Central area (13.11 percent).

Rating Group	Area: Northeast	Southeast	Mid-Atlantic, Near Midwest	North Central	South Central	Pacific Mountain
Operations Technicians	-	+	--	+	++	-
Weapons Technicians	-	-	++	-	+	=
Main Propulsion	+	=	-	--	-	++
Engineering Support	=	=	+	++	--	-

Differences within the Pacific Mountain area. The Pacific Mountain area exhibits some interesting concentrations of the four occupational segments and is analyzed further as an interesting (not necessarily typical) example of the distribution of reentries. Table 2 breaks down the 1,410 reentries from this area (reported in Table 1) into districts. In Table 2 and its summary tabulation, below, relatively large shares of operations technicians reentered the Navy from Portland and Seattle. Of all operations technicians, 13.95 percent were from Portland, while 23.64 percent were from Seattle. These percentages were higher than the corresponding percentages for the combined four rating groups (10.78 percent from Portland, 16.81 percent from Seattle). Portland, on the other hand, provided only a meager share of weapons technicians (6.04 percent of all weapons technicians, compared with 10.78 percent of reentrants from the combined four rating groups). As previously reported in Table 1, the Pacific Mountain area supplied a favorable percentage of main propulsion ratings when compared to the U.S. as a whole. Within the area, San Diego exceeded even West Coast proportions (28.91 percent of reentrants with main propulsion ratings, 25.32 percent of reentrants

TABLE 2

Number of Reentrants in the Pacific Mountain Area
by Rating Group and District

Rating Group	District						
	Butte	Los Angeles	Portland	Oakland	Seattle	San Diego	Total
Operations Technicians	13 (5.04) [15.85]	35 (13.57) [14.52]	36 (13.95) [23.68]	55 (21.32) [16.13]	61 (23.64) [25.74]	58 (22.48) [16.25]	258 (100) [18.30]
Weapons Technicians	9 (6.04) [10.98]	25 (16.87) [10.37]	9 (6.04) [5.92]	41 (27.52) [12.02]	25 (16.78) [10.55]	40 (26.85) [11.20]	149 (100) [10.57]
Main Propulsion	27 (5.87) [32.93]	69 (15.00) [28.63]	49 (10.65) [32.24]	119 (25.87) [34.90]	63 (13.70) [26.58]	133 (28.91) [37.25]	460 (100) [32.62]
Engineering Support	33 (6.08) [40.24]	112 (20.63) [46.47]	58 (10.68) [38.16]	126 (23.20) [36.95]	88 (16.21) [37.13]	126 (23.20) [35.29]	543 (100) [38.51]
Total	82 (5.82)	241 (17.09)	152 (10.78)	341 (24.18)	237 (16.81)	357 (25.32)	1,410 (100)

$\chi^2 = 29.43$, d.f. = 15, $p<.014$

( )Percent of rating group reentrants from each district.

[ ]Percent of reentrants in each district who were in specified rating group.

from a combination of all four rating groups). Favorable proportions (20.63) of engineering support ratings reentered service from the Los Angeles District.

The distribution of reentries in other areas was also investigated. These data are reported in Appendix Tables A-1 to A-5.

Rating Group	District					
	Butte	Los Angeles	Portland	Oakland	Seattle	San Diego
Operations Technicians	-	-	++	-	++	-
Weapons Technicians	=	=	--	+	=	+
Main Propulsion	=	-	=	+	-	+
Engineering Support	+	++	=	-	-	-

Rating Group Differences by Demographic and Socieconomic Variables

Upon comparing rating groups with a series of demographic and socioeconomic variables, many of the tables are extensive, and all those reported included statistically significant findings. Tables A-6 through A-14 are made available in the appendix to this report for detailed inspection. Meanwhile, tabular reporting will be continued with interpretation based primarily on the patterns which develop. Occasional interpretations may be dependent upon the numbers or percents in the appendix tables rather than on the tabular plus and minus signs.

Age differences. Recall that the present data base records information concerning individuals who reenter service. When the four rating groups were compared with respect to age at reentry, the following tabular arrangement developed:

Rating Group	Age Bracket 18-20 years	21-25 years	26-30 years	31-35 years	36 years and over
Operations Technicians	-	--	++	++	+
Weapons Technicians	+	--	++	+	-
Main Propulsion	-	-	+	=	+
Engineering Support	+	++	--	--	-

(See Appendix Table A-6 for further information.)

Compared with the reentrants in the combined four rating groups, there were relatively more operations technicians in the age brackets 26 years and over. The same is true to a lesser degree for the main propulsion ratings. The engineering support ratings reverse the situation since greater proportions occurred among 18 to 25 year olds. The reentry ages of weapons technicians showed less pattern; plus and minus signs alternated. A low concentration did occur in the 21-25 bracket, and a high concentration in the 26-30 bracket. Where older age groups are involved (as for operations technicians) the older ages may reflect many factors such as the requirement of more extensive training and stronger supervisory ability. Age variations are doubtless associated with several of the variables which are studied in subsequent analysis such as educational level, paygrade, and time in service.

Differences in term of service. To locate any relationships between rating groups and total active military service, categories were identified which described term of service in the following intervals: two, four, six, eight, and twelve years of service. Individuals in the

sample were then classified into the category which most closely described their term of service. The eight and twelve-year categories were chosen as multiples of the more standard terms of enlistment. The appendix Table A-7 shows the specific results, but the tabular arrangement combines the two and four-year categories because they proved to be similar. In general, it appears that the operations technicians, weapons technicians, and main propulsion groups had larger proportions of longer-term, and presumably more experienced, people. The engineering support group had larger proportions with only two or four years of service. The largest variations from the base totals are noted in the corners of the tabulation below.

Rating Group	Nearest Total Active Military Service: Two or Four Years Service	Six Years Service	Eight Years Service	Twelve or More Years Service
Operations Technicians	--	-	+	++
Weapons Technicians	-	-	+	+
Main Propulsion	-	+	+	+
Engineering Support	++	=	-	--

(See Appendix Table A-7 for further information.)

Differences in education at time of reentry. With regard to education, slightly over 77 percent of reentries in the selected ratings were classified as high school graduates. About 11 percent had less than a high school education, and another 11 percent had more than a

high school education. High school graduates were somewhat evenly distributed among the four rating groups. Two differences were found for operations technicians and engineering support personnel -- lower proportions of high school graduates among operations technicians and higher proportions among main propulsion personnel. The two technical groups (operations technicians and weapons technicians) had greater proportions of individuals with at least some college, while the two craft groups contained greater proportions of individuals who had not completed high school.

	Educational Level		
Rating Group	Less Than High School	High School Graduates	Some College or College Graduate
Operations Technicians	--	-	++
Weapons Technicians	--	=	++
Main Propulsion	+	+	--
Engineering Support	++	=	--

(See Appendix A-8 for further information.)

Differences in AFQT score. The summary tabulation for AFQT groups is quite similar to that for educational levels. In the AFQT pattern, however, there is only one slightly ambiguous cell (AFQT groups IVA-V, Main Propulsion staff), and the appendix table collapses readily with the results displayed in Table 3.

TABLE 3

Number of Reentrants[a] by Specialty Area and AFQT Group[b]

Specialty	AFQT Group[a] I and II[b]	IIIA through V[b]	Total
Technical Specialties	962 (85.51)	163 (14.49)	1,125 (100)
Craft Specialties	810 (46.93)	916 (53.07)	1,726 (100)
Total	1,772 (62.15)	1,079 (37.85)	2,851 (100)

$\chi^2 = 431.25$ d.f. = 1, $p < .001$

( )Percent of specialty group reentrants in each category of AFQT Groups.

[a]Note that a very substantial number of cases are missing from the data set.

[b]AFQT Group I includes the best-scoring individuals. Group V includes the worst-scoring individuals.

Rating Group	AFQT Score Groups[a] I	II	IIIA	IIIB	IVA-V
Operations Technicians	+	+	-	-	-
Weapons Technicians	+	+	-	-	-
Main Propulsion	-	-	+	+	=
Engineering Support	-	-	+	+	+

(See Appendix Table A-9 for further information.)

[a]AFQT Group I includes the best-scoring individuals. Group V represents the worst-scoring individuals.

Quite obviously, the technical specialties demand a higher quality of individual as measured by the AFQT standardized scores. The chance of being in these specialties without a I or II group score seems to be about one in seven. The similar odds among the craft ratings is about one of two. Depending upon relative shortages in the specialties of the two groups, some of the more qualified craft personnel could perhaps be retrained for critical technical occupations.

Differences in race or ethnic origin. The race-ethnic mixture of enlisted men in the critical ratings for the period was: whites 86.2 percent, blacks 9.3 percent, Hispanic (Spanish surnames) 2.4 percent, and all others about 2.1 percent. As the summary tabulation shows, blacks were somewhat more prevalent in the two craft groups and whites in the two technical groups. The Hispanics were more evenly distributed among the four occupational groups but approximated the white distribution in that the relative numbers lean slightly toward the technical ratings. The residual group, in addition to containing small numbers, shows some tendency to be employed in the main propulsion category.

Rating Group	Race - Ethnic Group			
	White	Black	Hispanic	Other
Operations Technicians	+	--	+	-
Weapons Technicians	+	--	+	-
Main Propulsion	-	+	=	+
Engineering Support	-	++	-	-

(See Appendix Table A-10 for further information.)

Differences in area of prior service. Since the data base here contains only reentries of prior-service people, it is interesting to review the services represented. A coding change for storing the data, however, limits the analysis to FY1978 and to September through February of FY1979. Among reentries during this short time, the Navy, of course, provided the majority of enlistments. The Army supplied 20.9 percent and the Air Force and Marines about 8.2 and 6.6 percent, respectively. A definite pattern also emerged with the Navy dominating the main propulsion ratings and providing more than its share of engineering support people. The other three services supplied greater relative shares of the technical ratings. Other service veterans probably constitute a favorable source of trained personnel for some specific ratings and a less productive source for others.

Rating Group	Area of Prior Service			
	Army	Navy	Air Force	Marines
Operations Technicians	+	--	++	+
Weapons Technicians	+	--	+	+
Main Propulsion	--	++	--	-
Engineering Support	=	+	--	-

(See Appendix Table A-11 for further information.)

Differences in waiver status. About 34.2 percent of the personnel in the selected occupational categories required waivers for reentry. Among the rating groups, the weapons technicians and engineering support classifications varied little from the overall experience. The main propulsion category required proportionately fewer and the operations technicians more waivers than the four groups combined.

Rating Group	Waiver Needed	
	No Waiver	Waiver
Operations Technicians	--	++
Weapons Technicians	+	-
Main Propulsion	++	--
Engineering Support	-	+

(See Appendix Table A-12 for further information.)

Differences in pay grade at time of reentry. While the tabular pattern for pay grade upon reentry is not clearly defined, it suggests the following: the relatively heavy percent of EO-1 to EO-3 entries among operations technicians seems to indicate greater need in these specialties to seek out and provide further training for men at higher pay grades. The relatively heavy percent of EO-5 and over entries in the main propulsion specialties seems to say that men in upper pay grades were easier to persuade or felt impelled to return to the Navy. Less obvious are any reasons for the relatively low percent of EO-4's among operations technicians and weapons technicians and higher proportions among engineering support ratings.

Rating Group	Pay grade at Reentry: EO-1 to EO-3	EO-4	EO-5 and over
Operations Technicians	++	--	+
Weapons Technicians	+	--	+
Main Propulsion	--	+	++
Engineering Support	+	++	--

(See Appendix Table A-13 for further information.)

Differences in most recent pay grade. The most recent pay grade (as distinct from reentry pay grade noted above) should and does show much the same pattern as total service. The operations technicians, weapons technicians, and main propulsion ratings had relatively larger proportions of EO-5 and over pay grades. The engineering support

ratings had relatively large proportions in the pay grades EO-4 and below. Appendix Tables A-13 and A-14 call attention to the extensive progress made in obtaining advanced pay grades. Noting a few totals only, there were 2,466 EO-1's to EO-3's upon reentry, compared with only 803 for the most recent records. The number in the EO-5 and over categories increased from 1,988 to 2,916. Similar changes could be traced within each of the rating groups.

Rating Group	Most Recent Pay Grade			
	EO-1 to EO-3	EO-4	EO-5	EO-6 and over
Operations Technicians	-	=	+	+
Weapons Technicians	-	-	+	+
Main Propulsion	-	-	+	+
Engineering Support	+	+	-	-

(See Appendix Tables A-13 and A-14 for further information.)

Rating Group Differences by Time Period and by Term of Enlistment

Differences by time period. Data on the number of reentries were compared over time. Data for two time periods (FY's 1978-1979 and FY's 1980-1981) were used as a basis for this comparison. Although the selection of only two time periods limits the scope of the analysis, it provides a basis for suggesting changes over time.

For the four critical rating groups there were 54.87 percent more reentries in Period 2 (FY1980-FY1981) than in Period 1 (FY1978-FY1979). Of the 6,331 reentries during FY's 1978-1981, 3,847 (60.76 percent)

reentered during the later two years. While the number of reentrants increased for all four groups, the data in Table 4 indicate that the relative change between the two periods was disproportionate. The increase in the number of reentering weapons technicians (55.30 percent) closely matched and cannot be said to differ from the combined experience. The increase in the number of reentering operations technicians (28.88 percent) failed to increase as rapidly as the base totals. The percent increase for engineering support staff (68.21 percent) was more rapid than that for operations technicians (28.88 percent), main propulsion staff (57.71 percent), or the combined experience of all four groups (54.87 percent).

Time period changes in the number of reentrants may, of course, result from many factors--for example, short-term changes in the business cycle or longer term structural changes in recruiting or Navy technology. While manning tables may change slowly over time, shortages and consequent requirements doubtless reflect the differential rates at which occupational groups leave or return to the Navy. On the supply side, the available pool of eligible and interested prior-service people doubtless varies from one period to another. Conditions internal and external to the Navy must be considered when reviewing time period or other changes in recruiting for purposes of segmentation and policy development.

Differences in terms of enlistment. The terms of enlistment (that is, two, four, or six years) proved somewhat disproportionate among the ratings groups. The percentage of operations technicians in the three categories of enlistment length differed only slightly from the corresponding base percentages. However, substantial differences are

TABLE 4

Number of Reentrants by Rating Group and Time Period

Rating Group	Time Period: FY's 1978-79	Time Period: FY's 1980-81	Total	Percent Increase Between the Two Time Periods
Operations Technicians	559 (43.71)	720 (56.29)	1,279 (100)	28.88
Weapons Technicians	264 (39.17)	410 (60.83)	674 (100)	55.30
Main Propulsion	733 (38.80)	1,156 (61.20)	1,889 (100)	57.71
Engineering Support	928 (37.28)	1,561 (62.72)	2,489 (100)	68.21
Total	2,484 (39.24)	3,847 (60.76)	6,331 (100)	54.87

$\chi^2 = 14.85$, d.f. = 3, $p < .002$

( )Percent of reentrants in each rating group who reentered in specified time period.

recorded in Table 5 for the other three groups. The table is summarized as before for quick review:

Rating Group	Term of Enlistment: Two Years	Four Years	Six Years
Operations Technicians	-	=	=
Weapons Technicians	--	++	+
Main Propulsion	+	--	++
Engineering Support	=	++	--

Tracing the tabular results back in Table 5, one can observe that four-year terms of enlistment constitute almost 52 percent of the total. Six- and two-year terms make up about 27 and 21 percent, respectively. Comparing the rating groups with these base totals, there were relatively low concentrations of two-year enlistments of weapons technicians, four-year enlistments of main propulsion personnel, and six-year enlistments of engineering support staff. Relatively heavy concentrations of six-year enlistments occurred among main propulsion personnel and four-year enlistments among both weapons technicians and engineering support staff. Whatever conditions prompted more rapid growth among the craft than the technical ratings may also have affected the greater proportion of four-year commitments among the engineering support personnel and six-year terms for the main propulsion staff.

TABLE 5

Number of Reentrants By Rating Group and Term of Enlistment

Rating Group	Term of Enlistment			
	Two Years	Four Years	Six Years	Total
Operations Technicians	262 (20.48)	666 (52.07)	351 (27.44)	1,279 (100)
Weapons Technicians	102 (15.13)	384 (56.97)	188 (27.89)	674 (100)
Main Propulsion	449 (23.78)	842 (44.60)	597 (31.62)	1,888 (100)
Engineering Support	525 (21.12)	1,381 (55.55)	580 (23.33)	2,486 (100)
Total	1,338 (21.15)	3,273 (51.73)	1,716 (27.12)	6,327 (100)

$\chi^2 = 74.64$, d.f. = 6, $p < .0001$

( )Percent of reentrants in each rating group who reentered for specified term of enlistment.

GEOGRAPHIC DIFFERENCES

This portion of the report investigates geographic differences in the proportion of reentrants between two periods, FY's 1978-1979 and 1980-1981. It will show in greater detail that for specific rating groups different reentry levels occurred among several of the six recruiting areas and for many districts within areas. Finally, it will be demonstrated that the terms of enlistments also varied among certain areas and districts within areas.

Shifts in Reentry Levels: Changes Between Time Periods and Differences Among Geographical Areas

Table 6 was constructed to explore possible inconsistencies in reentry levels from one period to another in the six recruiting areas. The Chi-square statistic indicates that recruiting levels did indeed vary from one period to the next.

All six recruiting areas manifested higher levels of recruiting in Period 2 over Period 1. An inspection of the percentages in each column of Table 6 shows that area recruiting levels did indeed differ from each other in most instances, sometimes substantially. Where these percentages differ between Periods 1 and 2, the levels of reentry also shifted from one time period to the next. (Such a difference was observed from the Mid-Atlantic, Near Midwest; South Central; and Pacific Mountain areas). This can be shown by comparing area rates of change to the similar rate of change for the United States.

Differences among the rates of change between Periods 1 and 2 are even more dramatic than shifts in the levels of reentry. Working from the base observations in Table 6, the rate of change for the U.S.

TABLE 6

Number of Reentrants by Geographic Area and Time Period

Geographic Area	Time Period: FY's 1978-79	FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Northeast	340 (38.77)	537 (61.23)	877 (100)	57.94
Southeast	466 (39.03)	728 (60.97)	1,194 (100)	56.22
Mid Atlantic, Near Midwest	431 (37.54)	717 (62.46)	1,148 (100)	66.36
North Central	300 (39.11)	467 (60.89)	767 (100)	55.67
South Central	447 (48.01)	484 (51.99)	931 (100)	8.28
Pacific Mountain	496 (35.18)	914 (64.82)	1,410 (100)	84.27
United States	2,480 (39.20)	3,847 (60.80)	6,327 (100)	55.12

$\chi^2 = 41.32$, d.f. = 5, $p < .0001$

( )Percent of area reentrants during each time period

may be calculated as 55.12 percent (3,847 - 2,480)/2,480). Similar calculations for the respective areas supply the following:

Area 1 = 57.94%	Area 3 = 56.22%	Area 4 = 66.36%
Area 5 = 55.67%	Area 7 = 8.28%	Area 8 = 84.27%

For these percentages, the North Central area cannot be said to differ from the U.S., and the Southeast area is barely significant at the 95 percent level of confidence.[a] All other areas differ from the U.S. at high levels of confidence. As before, the striking observations occur in the South Central and Pacific Mountain areas. The rate of increase in the South Central area lags almost 47 percent behind the U.S. rate while the Pacific Mountain area exceeds the U.S. by about 29 percent.

Because of the relative nature of the reentry levels reported, one must be careful in evaluating shifts from one period to another. The Pacific Mountain area, for example, might have had poor success for that area in Period 1 such that Period 2 is perhaps only moderately favorable. Or Period 1 might have been quite favorable for the South Central area so that Period 2 is reasonably favorable in spite of the small increase. Then too, the observed changes might have been due to any number of area conditions as well as to recruiting efforts, personnel, or policies.

Differences within geographical areas. The six areas were analyzed separately in a manner similar to that of Table 6 and the discussion

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[a]Since the data contain the universe of occupational segments for FY's 1978-81, $Z = P - p/\sigma p$ and $\sigma p = \sqrt{P(100-P)/N}$. Comparing the Mid-Atlantic, Near Midwest area (Area 4) with the U.S. as an example, we have 55.12% - 66.36%/$\sqrt{55.12\ (44.88)/6327}$ or $Z = -17.98$, $p < .0001$.

above. To avoid excessive tables, district differences within the Pacific Mountain area are summarized in Table 7. Similar tables for the remaining five areas are available in Appendix Tables A-15 through A-19. Some districts in every area differed significantly from their area percentages of Period 2.

Differences within the Pacific Mountain area. As noted in Table 6, the percent increase in the number of reentrants was greater for the Pacific Mountain area than for the United States. Within the Pacific Mountain area, the San Diego district exhibited an exceptionally high increase in the number of reentrants (276 percent more in Period 2 than Period 1). Table 7 also shows that the Los Angeles, Butte, and Portland districts experienced lower increases than the U.S. as a whole. The contrast of San Diego and Los Angeles is especially striking since the increase of the former is farther above that for the total area than the latter is below. Experience in the remaining districts of Oakland and Seattle cannot be said to differ from that of the area.

Summary of geographical differences. To summarize, areas and districts within areas differ with respect to reentry levels. More important, the relative level of reentry in geographical units varies from one period to another. Further research intends to trace area differences, but will need to account for time-period changes. Meanwhile, the discrepancies noted in the above tables and those of the appendix may well be worth considering. New districts or boundary adjustments may account for some of the changes noted. Shifting concentrations of prior-service people may explain other discrepancies and suggest adjustment of recruiting efforts. As Table 7 shows, a favorable concentration of prior-service Navy people certainly exists in San Diego.

TABLE 7

Number of Pacific Mountain Reentrants by District and Time Period: Summary and Comparison with Area Base

District	Time Period FY's 1978-79	Time Period FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Butte	35 (42.68)	47 (57.32)	82 (100)	34.29
Los Angeles	119 (49.38)	122 (50.62)	241 (100)	2.52
Portland	61 (40.13)	91 (59.87)	152 (100)	49.18
Oakland	126 (36.95)	215 (63.05)	341 (100)	70.63
Seattle	80 (33.76)	157 (66.24)	237 (100)	96.25
San Diego	75 (21.01)	282 (78.99)	357 (100)	276.00
Pacific Mountain	496 (35.18)	914 (64.82)	1,410 (100)	84.27

$\chi^2 = 57.08$, d.f. = 5, $p < .0001$

( )Percent of district reentrants in each time period

Recall from Table 2 that San Diego was also a favorable location for the reentering of main propulsion ratings and, to a lesser degree, weapons technicians. Some unexplained aberrations may suggest further investigation to correct problems or to take advantage of favorable conditions.

Geographic Differences by Term of Enlistment

For analyzing the total set of critical ratings over the four fiscal years 1978 through 1981 by terms of enlistment, the terms were designated as two, four, and six-year terms. Among a relatively small number of less standardized terms, any one, three, or five-year terms were counted as the next higher year, and the few over six were counted as six-year terms. Given the larger tables which resulted, no attempt was made to trace differences to individual cells in the tables as in the previous analysis. The present intent is merely to explore the extent to which terms of enlistment vary geographically among reentry enlisted personnel.

Table 8 records reentry differences by terms of enlistment. The Chi-square test indicates that two, four, and six-year enlistments indeed reentered in different proportions in the several areas. As tables become extensive, they become difficult to interpret without very close inspection. A tabular summary, however, can draw out the meaning of Table 8 rather quickly. In the summary which follows, the minus, plus, and equal signs are treated in the manner indicated in Section 1 of this report.

TABLE 8

Number of Reentrants by Area and Term of Enlistment

Area	Term of Enlistment: Two Year	Four Year	Six Year	Total
Northeast	178 (20.32)	500 (57.08)	198 (22.60)	876 (100)
Southeast	236 (19.77)	623 (52.18)	335 (28.06)	1194 (100)
Mid-Atlantic, Near Midwest	258 (22.51)	534 (46.60)	354 (30.89)	1146 (100)
North Central	171 (22.32)	379 (49.48)	216 (28.20)	766 (100)
South Central	234 (25.13)	472 (50.70)	225 (24.17)	931 (100)
Pacific Mountain	261 (18.51)	763 (54.11)	386 (27.38)	1410 (100)
U. S. Total	1338 (21.16)	3271 (51.73)	1714 (27.11)	6323 (100)

$\chi^2 = 44.06$, d.f. = 6, $P < .0001$

( ) Percent of area reentrants in each category of term of enlistment

Area	Term of Enlistment Two Year	Four Year	Six Year
Northeast	-	++	--
Southeast	-	=	+
Mid Atlantic, Near Midwest	+	--	++
North Central	+	-	+
South Central	++	-	--
Pacific Mountain	--	++	=

In the tabular arrangement above, the Northeast had a comparatively large proportion of four-year enlistments and fewer six-year enlistments than the United States as a whole. Conversely, the Mid-Atlantic, Near Midwest area had relatively few four-year but relatively more six-year enlistments. The South Central area proved stronger on two-year and weaker on six-year enlistments. The Pacific Mountain area was weak on two and strong on four-year enlistments. Reference to the percent data in Table 8 will show that the comments here cover most of the large discrepancies in the table. Over all, of course, four-year terms constituted slightly over half the total, and six-year enlistments somewhat exceeded two-year enlistments.

Differences within areas. The distribution of terms of enlistment among districts within areas was also disproportionate in several instances. Chi-square tables (see Appendix Tables A-20 through A-24) proved statistically significant for the Southeast; Mid-Atlantic, Near Midwest; and South Central areas, but not for the Northeast and North Central areas.

Differences within the Pacific Mountain area. The Pacific Mountain area will again be used for illustration. Table 9 records district differences in this area, and the following tabulation summarizes the findings:

District	Term of Enlistment		
	Two Year	Four Year	Six Year
Butte	--	+	+
Los Angeles	++	=	--
Portland	=	=	=
Oakland	-	+	-
Seattle	-	=	+
San Diego	--	--	++

With this as in other areas, it should be noted that the number of reentrants and percent differences are relatively small. Portland, in the tabulation, matches area reentry levels quite closely. Other districts diverged from the area norm to a noticeable degree. The question, of course, is whether these differences should exist, and if so, do they follow Navy recruiting policies?

TABLE 9

Number of Reentrants by District and Term of Enlistment: Pacific Mountain Area

District	Term of Enlistment: Two Year	Four Year	Six Year	Total
Butte	12 (14.63)	46 (56.10)	24 (29.27)	82 (100)
Los Angeles	66 (27.39)	129 (53.53)	46 (19.09)	241 (100)
Portland	27 (17.76)	83 (54.61)	42 (27.63)	152 (100)
Oakland	59 (17.30)	194 (56.89)	88 (25.81)	341 (100)
Seattle	40 (16.88)	130 (54.85)	67 (28.27)	237 (100)
San Diego	57 (15.97)	181 (50.70)	119 (33.33)	357 (100)
Area Total	261 (18.51)	763 (54.11)	386 (27.38)	1410 (100)

$\chi^2 = 25.35$, d.f. = 10, $P < .0047$

( ) Percent of district reentrants in each category of term of enlistment

RECRUITING IMPLICATIONS

Tentative Profiles

The numerous tables in the first section of this report and the supplementary appendices may best be summarized by combining the more outstanding features of the several rating groups to form profiles. The following profiles must be interpreted carefully because the selected features are comparative, and the analysis is preliminary. The profiles do not reflect absolute numbers; rather, they tend to distinguish one rating group from another.

The relative ability to acquire reentrants in the four rating groups differed to some extent among the geographical areas and among districts within areas. Compared to overall experience, the South Central area was relatively favorable for acquiring prior-service operations technicians, and the Pacific Mountain area was similarly favorable for main propulsion specialties. With the Pacific Mountain area, which supplied the greatest numbers of all critical ratings, Seattle was comparatively favorable for operations technicians, Oakland for weapons technicians, San Diego for main propulsion personnel, and Los Angeles for engineering support people.

In general, the demographic and socioeconomic profiles of the technical groups are quite distinct from the craft groups. Within these two classes, the operations and weapons technicians are fairly similar to each other. The profiles of the main propulsion and engineering support groups show greater distinction.

Where, proportionately, the operations technicians tended to be drawn from the 26 years and over age brackets, the weapons technicians

came from the 18-20 and 26-35 brackets, a slightly shorter span. When classified by length of active service, both technical groups showed longer time in service than the craft ratings. Both technical groups were more likely to have AFQT scores in the I and II categories (the higher-scoring categories) and to have at least some college training. Although more entry paygrades were in the EO-1 and EO-3 or the EO-5 and over paygrades, the most recent paygrades for both groups tended to be in the EO-5 and over levels. Both groups were dominantly and proportionately white, but also included some Hispanics. Operations technicians were more likely to need waivers than weapons technicians. Both technical groups tended to attract more Air Force, Marines, and Army OSVETS than the craft groups.

Although the main propulsion group shared some characteristics with the technical ratings, the two craft groups were reasonably distinct from each other and, together, distinct from the technicians. Greater proportions of the main propulsion enlisted men were in the 26-30 and 36 and over brackets, while the engineering support reentries were proportionately greater in the 21-25 age brackets. The main propulsion people were more likly to be in the six, eight, and twelve-year length-of-service classes. The engineering support group tended to have more people with only two or four years of service. In contrast with the technical groups, both craft groups were likely to have AFQT scores of IIIA or lower and have less than a high school education. Reentry paygrades for the main propulsion group tended to fall in the EO-5 class and the engineering support group in the EO-1 to EO-3 and EO-4 categories. The most recent paygrades remained high for the main propulsion group and stayed in the previous lower range for the engineering support

group. Unlike the two technical groups, both craft groups had greater proportions of blacks, especially the engineering support group. Like the weapons technicians, the main propulsion group was less dependent upon waivers, but the engineering support group depended more on waivers. Both groups attracted fewer OSVETS than the technical groups; the craft groups were more dependent upon Navy veterans.

Availability of prior-service men in the weapons technician and main propulsion ratings approximated overall experience during the two periods covered by the data. On the other hand, operations technicians were relatively less available and engineering support ratings more available in the FY 1980-1981 period. The main propulsion group thus was similar to the weapons technicians, and the engineering support group contrasts with the operations technicians.

With regard to terms of enlistment, the operations technicians could not be distinguished from the combination of other occupational groups. The weapons technicians tended to sign on for four or six-year terms. Four-year terms were relatively likely for the engineering support group, and the main propulsion ratings tended to split toward two or six-year terms.

Geographic Differences

The relative change in recruiting the combined set of critical ratings between the periods FY 1978-1979 and FY 1980-1981 was most noticeable in three of the six recruiting areas. The Mid-Atlantic, Near Midwest area modestly outpaced, and the Pacific Mountain area definitely outpaced the general growth in recruiting of critical ratings, while the South Central area lagged significantly behind the overall increase. Within the Pacific Mountain area, which exhibited the greatest increase, the Los Angeles district fell far behind the area experience; and San

Diego forged ahead. Recruiting opportunities or efforts do not result in consistent change among geographical units from one time period to the next.

Geographical differences also occurred with regard to the terms of service sought by or offered to the set of reentry personnel. The South Central area, for example, contributed more than its share of two-year enlistments and the Mid-Atlantic, Near Midwest area more than its share of six-year enlistments. Within the Pacific Mountain area, similarly, Los Angeles came out heavy on two-year enlistments and San Diego on six-year enlistments. Where a fairly consistent policy might be expected to standardize terms of enlistment, the data showed surprising differences among geographic units.

FURTHER STAGES OF RESEARCH

The above analysis confirms certain basic portions of the research strategy incorporated in early stages of the total project. It is feasible to select and analyze critical ratings as an important segment of the prior-service component of the mid-grade petty officer market. The critical ratings can be further segmented into related occupational categories which have been shown to be reasonably distinct on a number of characteristics or descriptor variables. The four ratings segments defined do tend to cluster differently in districts within recruiting areas and among areas. Profiles to describe each CREO segment can be developed, and relatively favorable geographical clusters can be identified for each segment.

A foundation has been established for the segmentation portion of the overall project. In subsequent research, each of the CREO segments

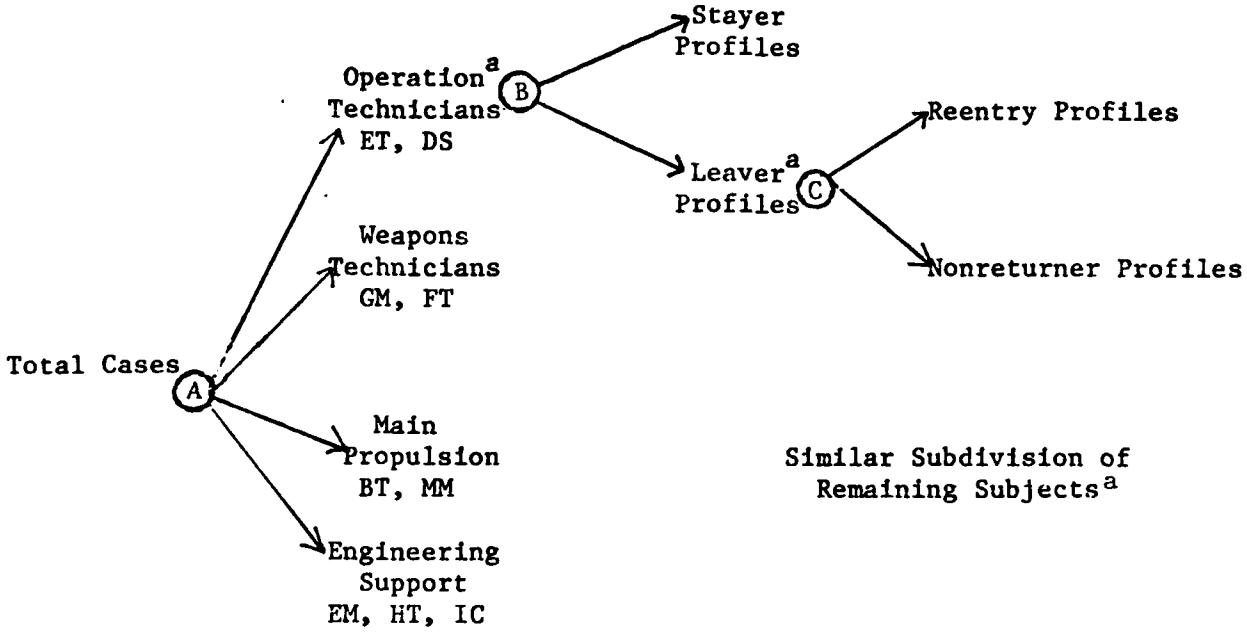
-- operations technicians, weapons technicians, main propulsion, and engineering support -- will be further classified as stayers and leavers. As indicated in Figure 2, the descriptive profiles will be developed and refined to compare and contrast the stayers and leavers. The leavers will then be segmented into reentries and nonreturners to identify distinguishing characteristics or descriptors of these subsegments. As part of this analysis or as a final stage, clusters of the final subsegments will be analyzed by recruiting areas and districts.

These additional analyses will also involve more sophisticated methodology. Discriminant analysis will be used to refine the comparative profiles and to indicate the relative importance of the various descriptors. Additional techniques will be explored and used where productive.

The end product of the segmentation study will describe "who" within each of the CREO segments may be expected to sign on for relatively long terms of enlistment, to leave after one or possibly two short terms, and to return after having left. Together with identification of "where" geographical clusters of the segments may occur, the descriptions are expected to provide a basis for recruiting strategies and tactics targeted at the critical ratings. The strategies and tactics might have some implications for redisigning AFEE stations and districts, but more direct applications are likely to apply to advertising and to face-to-face recruiting.

FIGURE 2

FURTHER ANALYSIS OF CREO SEGMENTS



At point (A) all individuals are classified into one category which indicates their rating.

At point (B) all individuals in a particular rating category are classified as either stayers (who remain in the Navy continuously) or leavers (who separate from the Navy for at least twenty-four hours).

At point (C) all leavers in the particular rating category are classified as reentries (if they return to the Navy) or nonreturners (if they do not return to the Navy).

[a]The classification described at points (B) and (C) will also be completed in further research for each of the rating categories: weapons technicians, main propulsion, and engineering support.

REFERENCES

Stephenson, S. P., Beik, L. L., Ellison, D. R., and Fitch, S. D. Profile of prior-service accessions to the U.S. Navy: Fiscal Years 1973-1981 (Technical Report 83-1). University Park, PA: The Pennsylvania State University, Institute for Policy Research and Evaluation, March 1983.

APPENDIX: Supplementary Tables

TABLE A-1

Number of Reentrants by Rating Group and District: Northeast Area

Rating Group	District							
	Albany	Boston	Buffalo	New York	Harrisburg	Philadelphia	Newark	Total
Operations Technicians	22 [0.0] (12.72)	46 [2.6] (26.59)	38 [0.0] (21.97)	19 [0.0] (10.98)	19 [0.2] (10.98)	16 [0.6] (9.25)	13 [0.6] (7.51)	173 19.73[a]
Weapons Technicians	14 [0.7] (16.47)	15 [0.5] (17.65)	17 [0.2] (20.00)	9 [0.0] (10.59)	10 [0.0] (11.76)	12 [0.6] (14.12)	8 [0.0] (9.41)	85 9.69[a]
Main Propulsion	41 [0.6] (14.86)	60 [0.1] (21.74)	64 [0.2] (23.19)	25 [1.0] (9.06)	40 [1.2] (14.49)	27 [0.6] (9.78)	19 [1.7] (6.88)	276 31.47[a]
Engineering	39 [0.9] (11.37)	63 [1.1] (18.37)	74 [0.0] (21.57)	44 [1.0] (12.83)	38 [0.4] (11.08)	44 [0.7] (12.83)	41 [2.7] (11.95)	343 39.11[a]
Total	116 (13.23)	184 (20.98)	193 (22.01)	97 (11.06)	107 (12.20)	99 (11.29)	81 (9.24)	877 (100.00)

χ^2 = 17.98, d.f. = 18, p = .4573, N.S.

[ ] Cell χ^2

( ) Percent of rating group reentrants in each district

[a] Percent of all reentrants in each rating group

TABLE A-2

Number of Reentrants by Rating Group and District: Southeast Area

Rating Group	District								
	Mont-gomery	Fort Jackson	Jackson-ville	Atlanta	Nashville	Raleigh	Memphis	Miami	Total
Operations Technicians	29 [0.7] (11.28)	25 [5.6] (9.73)	49 [1.7] (19.07)	32 [4.8] (12.45)	33 [0.2] (12.84)	21 [1.0] (8.17)	25 [0.0] (9.73)	43 [2.4] (16.73)	257 21.52[a]
Weapons Technicians	15 [0.0] (12.71)	15 [0.6] (12.71)	19 [0.0] (16.10)	4 [3.6] (3.39)	19 [0.4] (16.10)	17 [2.1] (14.41)	13 [0.3] (11.02)	16 [0.0] (13.56)	 9.88[a]
Main Propulsion	45 [0.1] (12.71)	64 [1.4] (18.08)	54 [0.1] (15.25)	30 [0.0] (8.47)	52 [0.1] (14.69)	38 [0.1] (10.73)	23 [3.5] (6.50)	48 [0.0] (13.56)	354 29.65[a]
Engineering Support	69 [0.9] (14.84)	82 [1.3] (17.63)	67 [0.6] (14.41)	35 [0.5] (7.53)	63 [0.1] (13.55)	45 [0.1] (9.68)	53 [1.7] (11.40)	51 [1.8] (10.97)	465 38.94[a]
Total	158 (13.23)	186 (15.58)	189 (15.83)	101 (8.46)	167 (13.99)	121 (10.13)	114 (9.55)	158 (13.23)	1194 (100.00)

$\chi^2 = 35.72$, d.f. = 21, p = .0235

[ ] Cell χ^2

( ) Percent of rating group reentrants in each district

[a] Percent of all reentrants in each rating group

TABLE A-3

Number of Reentrants by Rating Group and District:
Mid-Atlantic, Near Midwest Area

Rating Group	District								
	Louis-ville	Richmond	Washington	Cleve-land	Columbus	Pitts-burgh	Detroit	Indian-apolis	Total
Operations Technicians	25 [0.0] (12.32)	35 [1.4] (17.24)	27 [1.7] (13.30)	15 [0.2] (7.39)	28 [0.3] (13.79)	18 [0.1] (8.87)	41 [3.1] (20.20)	14 [0.4] (6.90)	203 17.68[a]
Weapons Technicians	20 [0.7] (14.49)	20 [2.8] (14.49)	16 [0.2] (11.59)	11 [0.0] (7.97)	24 [0.3] (17.39)	15 [0.2] (10.87)	18 [0.5] (13.04)	14 [0.7] (10.14)	138 12.02[a]
Main Propulsion	40 [0.0] (12.05)	83 [2.5] (25.00)	34 [0.0] (10.24)	27 [0.0] (8.13)	49 [0.1] (14.76)	27 [0.7] (8.13)	44 [0.9] (13.25)	28 [0.0] (8.43)	332 28.92[a]
Engineering Support	53 [0.3] (11.16)	103 [0.1] (21.68)	42 [1.1] (8.84)	41 [0.1] (8.63)	76 [0.1] (16.00)	50 [0.4] (10.53)	73 [0.0] (15.37)	37 [0.1] (7.79)	475 41.38[a]
Total	138 (12.02)	241 (20.99)	119 (10.37)	94 (8.19)	177 (15.42)	110 (9.58)	176 (15.33)	93 (8.10)	1148 (100.00)

$\chi^2 = 19.17$, d.f. = 21, p = .5746, N.S.

[ ] Cell χ^2

( ) Percent of rating group reentrants in each district

[a] Percent of all reentrants in each rating group

TABLE A-4

Number of Reentrants by Rating Group and District:
North Central Area

Rating Group	District						
	Chicago	St. Louis	Kansas City	Minneapolis	Omaha	Milwaukee	Total
Operations Technicians	34 [1.1] (21.12)	23 [0.1] (14.29)	28 [0.5] (17.39)	27 [0.2] (16.77)	30 [0.6] (18.63)	19 [0.1] (11.80)	161 20.99[a]
Weapons Technicians	14 [0.0] (17.72)	11 [0.1] (13.92)	17 [0.1] (21.52)	7 [2.1] (8.86)	17 [0.0] (21.52)	13 [2.3] (16.46)	79 10.30[a]
Main Propulsion	32 [0.3] (15.92)	26 [0.6] (12.94)	46 [0.9] (22.89)	31 [0.0] (15.42)	49 [0.8] (24.38)	17 [1.0] (8.46)	201 26.21[a]
Engineering Support	55 [0.1] (16.87)	55 [0.8] (16.87)	62 [0.1] (18.02)	52 [0.1] (15.95)	68 [0.0] (20.86)	34 [0.0] (10.43)	326 42.50[a]
Total	135 (17.60)	115 (14.99)	153 (19.95)	117 (15.25)	164 (21.38)	83 (10.82)	767 (100.00)

χ^2 = 12.10, d.f. = 15, p = .6711, N.S.

[ ] Cell χ^2

( ) Percent of rating group reentrants in each district

[a] Percent of all reentrants in each rating group

TABLE A-5

Number of Reentrants by Rating Group and District:
South Central Area

Rating Group	District							
	Denver	Albuquerque	Dallas	Houston	Little Rock	New Orleans	San Antonio	Total
Operations Technicians	28 [1.4] (12.44)	29 [0.2] (12.89)	30 [0.1] (13.33)	23 [1.4] (10.22)	57 [1.0] (25.33)	31 [2.1] (13.78)	27 [0.0] (12.00)	225 24.17[a]
Weapons Technicians	17 [0.0] (16.19)	16 [0.1] (15.24)	18 [1.7] (17.14)	20 [2.8] (19.05)	15 [3.0] (14.29)	9 [0.4] (8.57)	10 [0.5] (9.52)	105 11.28[a]
Main Propulsion	51 [2.2] (19.17)	44 [1.4] (16.54)	32 [0.1] (12.03)	34 [0.0] (12.78)	59 [0.0] (22.18)	21 [1.9] (7.89)	25 [1.5] (9.40)	266 28.57[a]
Engineering Support	49 [0.2] (14.63)	40 [0.9] (11.94)	37 [0.6] (11.04)	45 [0.0] (13.43)	76 [0.0] (22.69)	38 [0.2] (11.34)	50 [2.3] (14.93)	335 35.98[a]
Total	145 (15.57)	129 (13.86)	117 (12.57)	122 (13.10)	207 (22.23)	99 (10.63)	112 (12.03)	931 (100.00)

χ^2 = 26.20, d.f. = 18, p = .0953, N.S.

[ ] Cell χ^2

( ) Percent of rating group reentrants in each district

[a] Percent of all reentrants in each rating group

TABLE A-6

Number of Reentrants by Rating Group and Age Bracket

Rating Group	Age					Total
	18 to 20 years old	21 to 25 years old	26 to 30 years old	31 to 35 years old	over 35 years old	
Operations Technicians	75 [1.0] (5.87)	424 [27.4] (33.18)	552 [14.9] (43.19)	183 [12.5] (14.32)	44 [0.9] (3.44)	1,278 20.26[a]
Weapons Technicians	53 [1.8] (7.91)	242 [6.9] (36.12)	273 [3.1] (40.75)	86 [2.0] (12.84)	16 [0.8] (2.39)	670 10.62[a]
Main Propulsion	103 [3.5] (5.47)	792 [0.2] (42.06)	713 [0.8] (37.87)	209 [0.0] (11.10)	66 [1.6] (3.51)	1,883 29.85[a]
Engineering Support	184 [2.7] (7.43)	1,239 [30.5] (50.00)	774 [19.8] (31.23)	218 [11.2] (8.80)	63 [1.7] (2.54)	2,478 39.28[a]
Total	415 (6.58)	2,697 (42.75)	2,312 (36.65)	696 (11.03)	189 (3.00)	6,309 (100.00)

χ^2 = 143.28, d.f. = 12, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants in each age bracket.

[a]Percent of all reentrants in each rating group.

TABLE A-7

Number of Reentrants by Rating Group and Nearest Total Active Years of Service

Rating Group	Number of Active Years of Service (Nearest Total) 2 Years Service	4 Years Service	6 Years Service	8 Years Service	12 or More Years Service	Total
Operations Technicians	114 [0.0] (8.91)	307 [21.8] (24.00)	391 [0.2] (30.57)	198 [6.5] (15.48)	269 [23.6] (21.03)	1279 20.20[a]
Weapons Technicians	60 [0.0] (8.90)	198 [0.8] (29.38)	197 [0.9] (29.23)	98 [1.4] (14.54)	121 [2.3] (17.95)	674 10.65[a]
Main Propulsion	137 [5.2] (7.25)	575 [0.5] (30.44)	609 [0.5] (32.24)	253 [0.3] (13.39)	315 [1.3] (16.68)	1889 29.84[a]
Engineering Support	247 [3.5] (9.92)	902 [19.3] (36.24)	785 [0.0] (31.54)	269 [8.6] (10.81)	286 [27.6] (11.49)	2489 39.31[a]
Total	558 (8.81)	1982 (31.31)	1982 (31.31)	818 (12.92)	991 (15.65)	6331 (100.00)

$\chi^2 = 124.35$, d.f. = 12, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants in each category of service length

[a] Percent of all reentrants in each rating group

TABLE A-8

Number of Reentrants by
Rating Group and Educational Level

Rating Group	Educational Level: Less Than High School Graduate	Educational Level: High School Graduate or G.E.D.	Educational Level: At Least Some College	Total
Operations Technicians	34 [86.0] (2.66)	946 [1.8] (73.96)	299 [164.0] (23.38)	1,279 20.20[a]
Weapons Technicians	47 [11.7] (6.97)	520 [0.0] (77.15)	107 [12.3] (15.88)	674 10.65[a]
Main Propulsion	220 [0.1] (11.65)	1,503 [1.3] (79.57)	166 [10.7] (8.79)	1,889 29.84[a]
Engineering Support	422 [66.8] (16.95)	1,922 [0.0] (77.22)	145 [66.5] (5.83)	2.489 39.31[a]
Total	723 (11.42)	4,891 (77.25)	717 (11.33)	6,331 100.00

χ^2 = 421.18, d.f. = 6, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants in each educational category.

[a]Percent of all reentrants in each rating group.

TABLE A-9

Number[a] of Reentrants by Rating Group and AFQT Group

Rating Group	AFQT Group (V-IVA) 1-30	(IIIR) 31-49	(IIIA) 50-64	(II) 65-92	(I) 93-99	Total
Operations Technicians	6 [50.3] (0.77)	22 [64.0] (2.84)	53 [44.2] (6.84)	468 [28.5] (60.39)	226 [104.9] (29.16)	775 27.18[b]
Weapons Technicians	10 [11.5] (2.86)	25 [10.0] (7.14)	47 [2.1] (13.43)	200 [7.3] (57.14)	68 [4.7] (19.43)	350 12.28[b]
Main Propulsion	58 [0.0] (8.19)	114 [4.1] (16.10)	160 [15.6] (22.60)	309 [1.9] (43.64)	67 [14.2] (9.46)	708 24.83[b]
Engineering Support	153 [63.9] (15.03)	219 [51.2] (21.51)	212 [11.2] (20.83)	369 [25.9] (36.25)	65 [49.9] (6.39)	1018 35.71[b]
Total	227 (7.96)	380 (13.33)	472 (16.56)	1346 (47.21)	426 (14.94)	2851 (100.00)

χ^2 = 565.35, d.f. = 12, p = .0001

[ ] Cell χ^2

( ) Percent of rating group in each AFQT group

[a] A substantial number of cases are excluded due to AFQT score's being missing

[b] Percent of all reentrants in each rating group

TABLE A-10

Number of Reentrants by Rating Group and Race-Ethnic Group

Rating Group	Race-Ethnic Group				
	White	Black	Hispanic	Other/ Unknown	Total
Operations Technicians	1145 [2.6] (90.44)	72 [17.5] (5.69)	34 [0.6] (2.69)	15 [5.4] (1.18)	1266 20.23[a]
Weapons Technicians	600 [1.2] (90.23)	37 [9.8] (5.56)	18 [0.4] (2.71)	10 [1.3] (1.50)	665 10.62[a]
Main Propulsion	1556 [1.9] (83.30)	206 [6.3] (11.03)	43 [0.0] (2.30)	63 [13.2] (3.37)	1868 29.85[a]
Engineering Support	2097 [0.3] (85.24)	265 [6.0] (10.77)	52 [0.6] (2.11)	46 [0.8] (1.87)	2460 39.30[a]
Total	5398 (86.24)	580 (9.27)	147 (2.35)	134 (2.14)	6259 (100.00)

$\chi^2 = 67.91$, d.f. = 9, p = .0001

[ ] Cell χ^2

( ) Percent of rating group in each race-ethnic group

[a] Percent of all reentrants in each rating group

TABLE A-11

Number of Reentrants by Rating Group and Prior-Service Area[a]

Rating Group	Prior-Service Area: Prior Army	Prior Navy	Prior Air Force	Prior Marine	Total
Operations Technicians	97 [4.3] (25.73)	185 [13.5] (49.07)	64 [34.9] (16.98)	31 [1.4] (8.22)	377 22.35[b]
Weapons Technicians	47 [3.3] (27.17)	86 [5.7] (49.71)	22 [4.2] (12.72)	18 [3.7] (10.40)	173 10.25[b]
Main Propulsion	75 [9.0] (14.79)	388 [11.9] (76.53)	18 [13.5] (3.55)	26 [1.7] (5.13)	507 30.05[b]
Engineering Support	133 [0.0] (21.11)	425 [1.0] (67.46)	35 [5.5] (5.56)	37 [0.6] (5.87)	630 37.34[b]
Total	352 (20.87)	1084 (64.26)	139 (8.24)	112 (6.64)	1687 (100.00)

$\chi^2 = 114.25$, d.f. = 9, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants from each area of prior service

[a] A coding change limits the analysis to FY1978 and Spetember through February of FY 1979

[b] Percent of all reentrants in each rating group

TABLE A-12

Number of Reentrants by Rating Group and Need for Waiver

Rating Group	Need for Waiver: No Waiver	Waiver	Total
Operations Technicians	780 [4.5] (60.99)	499 [8.6] (39.01)	1279 20.20[a]
Weapons Technicians	457 [0.4] (67.80)	217 [0.8] (32.20)	674 10.65[a]
Main Propulsion	1315 [4.2] (69.61)	574 [8.1] (30.39)	1889 29.84[a]
Engineering Support	1613 [0.4] (64.81)	876 [0.7] (35.19)	2489 39.31[a]
Total	4165 (65.79)	2166 (34.21)	6331 (100.00)

$\chi^2 = 32.40$, d.f. = 6, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants for each category of waiver need

[a] Percent of all reentrants in each rating group

TABLE A-13

Number of Reentrants by Rating Group
and Entry Pay Grade

Rating Group	Entry Pay Grade			
	Eϕ1-Eϕ3	Eϕ4	Eϕ5	Total
Operations Technicians	619 [29.3] (48.44)	249 [44.1] (19.48)	410 [0.2] (32.08)	1278 20.20[a]
Weapons Technicians	278 [0.9] (41.25)	149 [12.8] (22.11)	247 [5.8] (36.65)	674 10.65[a]
Main Propulsion	571 [37.0] (30.24)	626 [8.1] (33.16)	691 [16.1] (36.60)	1888 29.85[a]
Engineering Support	998 [0.9] (40.14)	848 [17.2] (34.11)	640 [25.5] (25.74)	2486 39.30[a]
Total	2466 (38.98)	1872 (29.59)	1988 (31.43)	6326 (100.00)

$\chi^2 = 197.82$, d.f. = 6, p = .0001

[ ] Cell χ^2

( ) Percent of rating group in each category of pay grade

[a] Percent of all reentrants in each rating group

TABLE A-14

Number of Reentrants by Rating Group and Most Recent Pay Grade

Rating Group	Most Recent Pay Grade				
	Eφ1-Eφ3	Eφ4	Eφ5	Over Eφ5	Total
Operations Technicians	88 [34.0] (6.88)	516 [0.0] (40.34)	467 [4.8] (36.51)	208 [5.8] (16.26)	1279 20.20[a]
Weapons Technicians	62 [6.5] (9.20)	253 [1.5] (37.54)	256 [5.1] (37.98)	103 [1.1] (15.28)	674 10.65[a]
Main Propulsion	196 [7.9] (10.38)	701 [5.5] (37.11)	688 [6.7] (36.42)	304 [7.4] (16.09)	1889 29.84[a]
Engineering Support	457 [63.2] (18.36)	1097 [7.6] (44.07)	678 [25.0] (27.24)	257 [21.5] (10.33)	2489 39.31[a]
Total	803 (12.68)	2567 (40.55)	2089 (33.00)	872 (13.77)	6331 (100.00)

$\chi^2 = 203.57$, d.f. = 9, p = .0001

[ ] Cell χ^2

( ) Percent of rating group reentrants in each category of pay grade

[a] Percent of all reentrants in each rating group

TABLE A-15

Number of Reentrants by District and Time Period:
Comparison of Northeast Area With Districts Within Northeast Area

District	Time Period: FY's 1978-79	Time Period: FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Albany	54 (46.55)	62 (53.45)	116 (100)	14.81
Boston	70 (38.04)	114 (61.96)	184 (100)	62.86
Buffalo	76 (39.38)	117 (60.62)	193 (100)	53.95
New York	29 (29.90)	68 (70.10)*	97 (100)	134.48
Harrisburg	33 (30.84)	74 (69.16)*	107 (100)	124.24
Philadelphia	41 (41.41)	58 (58.59)	99 (100)	41.46
Newark	37 (45.68)	44 (54.32)*	81 (100)	18.92
Northeast	340 (38.77)	537 (61.23)	877 (100)	57.94

χ^2 = 11,001, d.f. = 6, p = .0883, N.S.

( )Percent of district reentrants in each time period.

*Individual districts differed from the area at a confidence level greater than 99 percent.

TABLE A-16

Number of Reentrants by District and Time Period:
Comparison of Southeast Area With Districts Within Southeast Area

District	Time Period FY's 1978-79	Time Period FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Montgomery	65 (41.14)	93 (58.86)	158 (100)	43.08
Columbia	67 (36.02)	119 (63.98)*	186 (100)	77.61
Jacksonville	60 (31.75)	129 (68.25)**	189 (100)	115.00
Atlanta	37 (36.63)	64 (63.37)	101 (100)	72.97
Nashville	61 (36.53)	106 (63.47)	167 (100)	73.77
Raleigh	50 (41.32)	71 (58.68)	121 (100)	42.00
Memphis	53 (46.49)	61 (53.51)**	114 (100)	15.09
Miami	73 (46.20)	85 (53.80)	158 (100)	16.44
Southeast	466 (39.03)	728 (60.97)	1,194 (100)	56.22

$\chi^2 = 12.25$, d.f. = 7, $p < .0926$, N.S.

( )Percent of district reentrants in each time period.

* Individual districts differed from the area at a confidence level greater than 95 percent.

** Individual districts differed from the area at level greater than 99 percent.

TABLE A-17

Number of Reentrants by District and Time Period: Comparison of Mid-Atlantic, Near Midwest Area with Districts Within Mid-Atlantic, Near Midwest Area

District	Time Period FY's 1978-79	FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Louisville	62 (44.93)	76 (55.07)**	138 (100)	22.58
Richmond	86 (35.68)	155 (64.32)	241 (100)	80.23
Washington	45 (37.82)	74 (62.18)	119 (100)	64.44
Cleveland	34 (36.17)	60 (63.83)	94 (100)	76.47
Columbus	63 (35.59)	114 (64.41)	177 (100)	80.95
Pittsburgh	48 (43.64)	62 (56.36)**	110 (100)	29.17
Detroit	62 (35.23)	114 (64.77)	176 (100)	83.87
Indianapolis	31 (33.33)	62 (66.67)*	93 (100)	100.00
Mid-Atlantic, Near Midwest	431 (37.54)	717 (62.46)	1,148 (100)	66.36

$\chi^2 = 6.7$, d.f. = 7, $p < .4524$, N.S.

( )Percent of district reentrants in each time period.

* Individual districts differed from the area at a confidence level greater than 95 percent.

** Individual districts differed from the area at a level greater than 99 percent.

TABLE A-18

Number of Reentrants by District and Time Period: Comparison of North Central Area With Districts Within North Central Area

District	Time Period FY's 1978-79	FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Chicago	47 (34.81)	88 (65.19)*	135 (100)	87.23
St. Louis	43 (37.39)	72 (62.61)	115 (100)	67.44
Kansas City	68 (44.44)	85 (55.56)**	153 (100)	25.00
Minneapolis	46 (39.32)	71 (60.68)	117 (100)	54.35
Omaha	60 (36.59)	104 (63.41)	164 (100)	73.33
Milwaukee	36 (43.37)	47 (56.63)*	83 (100)	30.56
North Central	300 (39.11)	467 (60.89)	767 (100)	55.67

$\chi^2 = 4.09$, d.f. = 5, $p < .5364$, N.S.

( )Percent of district reentrants in each time period.

* Individual districts differed from the area at a confidence level greater than 95 percent.

** Individual districts differed from the area at a level greater than 99 percent.

TABLE A-19

Number of Reentrants by District and Time Period:
Comparison of South Central Area With Districts
Within South Central Area

District	Time Period FY's 1978-79	FY's 1980-81	Total FY's 1978-81	Percent Change Between Time Periods
Denver	59 (40.69)	86 (59.31)*	145 (100)	45.76
Albuquerque	59 (45.74)	70 (54.26)	129 (100)	18.64
Dallas	62 (52.99)	55 (47.01)*	117 (100)	-11.29
Houston	60 (49.18)	62 (50.82)	122 (100)	3.33
Little Rock	98 (47.34)	109 (52.66)	207 (100)	11.22
New Orleans	49 (49.49)	50 (50.51)	99 (100)	2.04
San Antonio	60 (53.57)	52 (46.43)	112 (100)	-13.33
South Central	447 (48.01)	484 (51.99)	931 (100)	8.3

$\chi^2 = 4.09$, d.f. = 5, $p < .5364$, N.S.

( )Percent of district reentrants in each time period.

* Individual districts differed from the area at a confidence level greater than 95 percent.

** Individual districts differed from the area at a level greater than 99 percent.

TABLE A-20

Number of Reentrants by District and Term of Enlistment: Northeast Area

District	Term of Enlistment: 1 or 2 Year Term	3 or 4 Year Term	Over 4 Year Term	Total
Albany	23 [0.0] (19.83)	75 [1.2] (64.66)	18 [2.6] (15.52)	116 13.24
Boston	32 [0.7] (17.49)	107 [0.1] (58.47)	44 [0.2] (24.04)	183 20.89[a]
Buffalo	45 [0.9] (23.32)	100 [0.9] (51.81)	48 [0.4] (24.87)	193 22.03[a]
New York	24 [0.9] (24.74)	53 [0.1] (54.64)	20 [0.2] (20.62)	97 11.07[a]
Harrisburg	25 [0.5] (23.36)	63 [0.1] (58.88)	19 [1.1] (17.76)	107 12.21[a]
Philadelphia	20 [0.0] (20.20)	54 [0.1] (54.55)	25 [0.3] (25.25)	99 11.30[a]
Newark	9 [3.4] (11.11)	48 [0.1] (59.26)	24 [1.8] (29.63)	81 9.25[a]
Northeast	178 20.32	500 57.08	198 22.60	876 100.00

$\chi^2 = 15.44$, d.f. = 12, p = .2183, N.S.

[ ]Cell χ^2

( )Percent of district reentrants in each category of term of enlistment

[a] Percent of area reentrants in each district

TABLE A-21

Number of Reentrants by District and Term of Enlistment: Southeast Area

District	Term of Enlistment: 1 or 2 Year Term	3 or 4 Year Term	Over 4 Year Term	Total
Montgomery	34 [0.2] (21.52)	86 [0.2] (54.43)	38 [0.9] (24.05)	158 13.23[a]
Ft. Jackson	31 [0.9] (16.67)	102 [0.3] (54.84)	53 [0.0] (28.49)	186 15.58[a]
Jacksonville	31 [1.1] (16.40)	88 [1.1] (40.56)	70 [5.4] (37.04)	189 15.83[a]
Atlanta	20 [0.0] (19.80)	61 [1.3] (60.40)	20 [2.5] (19.80)	101 8.46[a]
Nashville	35 [0.1] (20.96)	73 [2.3] (43.71)	59 [3.1] (35.33)	167 13.99[a]
Raleigh	27 [0.4] (22.31)	69 [0.5] (57.02)	25 [2.4] (20.66)	121 10.13[a]
Memphis	29 [1.9] (25.44)	62 [0.1] (54.39)	23 [2.5] (20.18)	114 9.55[a]
Miami	29 [0.2] (18.35)	82 [0.0] (51.90)	47 [0.2] (29.75)	158 13.23[a]
Southeast	236 (19.77)	623 (52.18)	335 (28.06)	1,194 (100.00)

$\chi^2 = 27.56$, d.f. = 14, p = .0163

[ ]Cell χ^2

( )Percent of district reentrants in each category of term of enlistment

[a] Percent of area reentrants in each district

TABLE A-22

Number of Reentrants by District and Term of Enlistment: Mid-Atlantic, Near Midwest Area

District	Term of Enlistment: 1 or 2 Year Term	3 or 4 Year Term	Over 4 Year Term	Total
Louisville	43 [4.8] (31.39)	57 [0.7] (41.61)	37 [0.7] (27.01)	137 11.95[a]
Richmond	37 [5.5] (15.35)	123 [1.0] (51.04)	81 [0.6] (33.61)	241 21.03[a]
Washington	31 [0.7] (26.05)	50 [0.5] (42.02)	38 [0.0] (31.93)	119 10.38[a]
Cleveland	22 [0.1] (23.66)	43 [0.0] (46.24)	28 [0.0] (30.11)	93 8.12[a]
Columbus	48 [1.7] (27.12)	73 [1.1] (41.24)	56 [0.0] (31.64)	177 15.45[a]
Pittsburgh	24 [0.0] (21.82)	59 [1.2] (53.64)	27 [1.4] (24.55)	110 9.60[a]
Detroit	38 [0.1] (21.59)	91 [1.0] (51.70)	47 [1.0] (26.70)	176 15.36[a]
Indianapolis	15 [1.7] (16.13)	38 [0.7] (40.86)	40 [4.4] (43.01)	93 8.12[a]
Mid-Atlantic, Near Midwest	258 (22.51)	534 (46.60)	354 (30.89)	1146 (100.00)

$\chi^2 = 28.82$, d.f. = 14, p = .0110

[ ] Cell χ^2

( ) Percent of district reentrants in each category of term of enlistment

[a] Percent of area reentrants in each district

TABLE A-23

Number of Reentrants by District and Term of Enlistment: North Central Area

District	Term of Enlistment: 1 or 2 Year Term	3 or 4 Year Term	Over 4 Year Term	Total
Chicago	28 [0.2] (20.74)	66 [0.0] (48.89)	41 [0.2] (30.37)	135 17.62[a]
St. Louis	36 [4.2] (31.30)	53 [0.3] (46.09)	26 [1.3] (22.61)	115 15.01[a]
Kansas City	31 [0.3] (20.39)	75 [0.0] (49.34)	46 [0.2] (30.26)	152 19.84[a]
Minneapolis	25 [0.0] (21.37)	64 [0.6] (54.70)	28 [0.8] (23.93)	117 15.27[a]
Omaha	28 [2.0] (17.07)	87 [0.4] (53.05)	49 [0.2] (29.88)	164 21.41[a]
Milwaukee	23 [1.1] (27.71)	34 [1.2] (40.96)	26 [0.3] (31.33)	83 10.84[a]
North Central	171 (22.32)	379 (49.48)	216 (28.20)	766 (100.00)

$\chi^2 = 13.210$, d.f. = 10, p = 0.2122, N.S.

[ ] Cell χ^2

( ) Percent of district reentrants in each category of term of enlistment

[a] Percent of area reentrants in each district

TABLE A-24

Number of Reentrants by District and Term of Enlistment: South Central Area

District	Term of Enlistment: 1 or 2 Year Term	3 or 4 Year Term	Over 4 Year Term	Total
Denver	44 [1.6] (30.34)	52 [6.3] (35.86)	49 [5.6] (33.79)	145 15.57[a]
Albuquerque	30 [0.2] (23.26)	65 [0.0] (50.39)	34 [0.3] (26.36)	129 13.86[a]
Dallas	30 [0.0] (25.64)	66 [0.8] (56.41)	21 [1.9] (17.95)	117 12.57[a]
Houston	20 [3.7] (16.39)	64 [0.1] (52.46)	38 [2.5] (31.15)	122 13.10[a]
Little Rock	49 [0.2] (23.67)	113 [0.6] (54.59)	45 [0.5] (21.74)	207 22.23[a]
New Orleans	30 [1.1] (30.30)	58 [1.2] (58.59)	11 [7.0] (11.11)	99 10.63[a]
San Antonio	31 [0.3] (27.68)	54 [0.1] (48.21)	27 [0.0] (24.11)	112 12.03[a]
South Central	234 (25.13)	472 (50.70)	225 (24.17)	931 (100.00)

$\chi^2 = 33.71$, d.f. = 12, p = .0007

[ ] Cell χ^2

( ) Percent of district reentrants in each category of term of enlistment

[a] Percent of area reentrants in each district

OTHER TECHNICAL REPORTS OF THIS PROJECT[a]

As part of the project titled "An Empirical Study to Enhance the Reenlistment Process of Civilian Personnal with Prior Military Service"[b] the following technical reports have been completed.

Stephenson, S. P., Beik, L. L., Ellison, D. R., & Fitch, S. D. Profile of prior-service accessions to the U.S. Navy: Fiscal Years 1973-1981 (Tech. Rep. ONR 83-1). University Park, PA: The Pennsylvania State University, Institute for Policy Research and Evaluation, April 1983.

Ellison, D. R., Mitchell, M. E., Beik, L. L., Stephenson, S. P., & Fitch, S. D. Separation of prior-service Navy personnel over two- and six-year periods: Fiscal years 1973-1981 (Tech. Rep. ONR 83-2). University Park, PA: The Pennsylvania State University, Institute for Policy Research and Evaluation, April 1983.

Beik, L. L., Mitchell, M. E., & Fitch, S. D. Segmentation of prior-service reentrants in the U.S. Navy: A preliminary analysis (Tech. Rep. ONR 83-3). University Park, PA: The Pennsylvania State University, Institute for Policy Research and Evaluation, April 1983.

Other reports will be completed during the course of the project.

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[a]Additional copies of these reports can be obtained for a nominal charge. Requests for copies should be sent to:
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